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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/675,937	09/30/2003	Evon Llewellyn Crooks	030627/267415	2368

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EXAMINER
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MAYES, DIONNE WALLS

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 05/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/675,937

Applicant(s)

CROOKS ET AL.

Examiner

Dionne Walls Mayes

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1- 17, 19, and 21-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Figlar et al (U.S. Patent No. 2004/023798) in view of Squires

In the embodiment represented by Figure 4, Figlar teaches a cigarette comprising a tobacco rod and a multi-section filter element connected to the tobacco rod, said filter element having an end proximal to the tobacco rod and an end distal from the tobacco rod, wherein said filter element comprises a first longitudinally extending section of filter material positioned at the end of the filter segment distal from the tobacco rod (142); a second longitudinally extending section of filter material positioned at the end of the filter material distal from the tobacco rod and spaced apart from said first section of filter material (142), the two sections of filter material, which can be fabricated from cellulose acetate tow or paper filter material, defining a compartment therebetween (the compartment comprising the "space" between the end filter units 142); a plug filter portion 142 located between 144 and 146 (corresponding to the claimed "semi-permeable barrier dividing said compartment") dividing said compartment into a first region and a second region. Figlar also teaches an ion exchange resin contained within the first region of said compartment (146); and a general adsorbent

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within the second region of said compartment (144). While Figlar may not specifically state that the first filter section has a greater particulate removal efficiency than the second section of filter material, Squires et al discloses that paper cigarette filters are known to be generally more efficient at removing tar/particulates from tobacco smoke than tow filters. Squires et al also discloses that multiple filters which have a paper filter section, a tow filter section, and a gap/adsorbent section therebetween are known in the tobacco art (see para. 0004). Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have provided the multi-section filter configuration of Figlar with a tow filter-space-paper filter configuration since such a filter arrangement is known in the tobacco art – as evidenced by the Squires reference.

Regarding claim 2, despite Figlar's failure to teach first region of the compartment being adjacent the first section of filter material, and said second region of the compartment adjacent the second section of filter material, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the adsorbent in the portion of the filter that would provide for optimal performance. Accordingly, claim 2 is rejected.

Regarding claim 3, Figlar teaches said first region of said compartment is adjacent to said second section of filter material and said second region of said compartment is adjacent to said first section of filter material (Fig. 4). Accordingly, claim 3 is rejected.

Regarding claims 4 and 29, Figlar teaches the ion exchange resin is in granular form (page 5, para. 0042, lines 2-4). Accordingly, claims 4 and 29 are rejected.

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Regarding claims 5 and 34, Figlar teaches the use of an ion exchange resin. Figlar fails to teach whether this resin is strongly or weakly basic. However, because Figlar fails to limit his teaching to any particular type of anion exchange resin, it would have been obvious to one of ordinary skill in the art at the time of the invention to be an ion exchange resin with a pH that optimizes filter performance. Accordingly, claims 5 and 34 are rejected.

Regarding claims 6, Figlar teaches the first section of filter material and said second section of filter material are each independently selected from cellulose acetate tow, polypropylene web, polypropylene tow, polyester web, paper, etc (page 2, para. 0020, lines 5-10). Accordingly, claim 6 is rejected.

Regarding claims 7 and 35, Figlar teaches the first section of filter material and said second section of filter material comprise plasticized cellulose acetate tow (page 2, para. 0020, lines 9-10). Accordingly, claims 7 and 35 is rejected.

Regarding claims 8 and 9, Figlar teaches the overall length of the filter element is about 27 mm (page 3, para. 0032, lines 1-10; Fig. 2). Accordingly, claims 8 and 9 are rejected.

Regarding claims 10 and 11, Figlar teaches each of the first and second sections of filter material is about 5 to about 25 mm or about 5 to about 15 mm, respectively (page 3, para. 10032, lines 1-10; Fig. 2). Accordingly, claims 10 and 11 are rejected.

Regarding claims 12 and 13, due to a lack of criticality and unexpected results, it would have been obvious to one of ordinary skill in the art at the time of invention to make the adsorbent-containing region and the ion exchange resin-containing region

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lengths (about 5 to about 20 mm *or* about 5 to about 10 mm) that will optimize filter performance. Accordingly, claims 12 and 13 are rejected.

Regarding claims 14 and 15, due to a lack of criticality and unexpected results, it would have been obvious to one of ordinary skill in the art at the time of invention to make the semi-permeable barrier a length (about 0.1 to about 10 mm *or* about 0.5 to about 5 mm) that will optimize filter performance. Accordingly, claims 14 and 15 are rejected.

Regarding claims 16 and 17, Figlar teaches the adsorbent is activated carbon (page 2, para. 0020, lines 4-10). Accordingly, claims 16 and 17 are rejected.

Regarding claim 19, Figlar teaches the adsorbent is in granular form (page 5, para. 0042, lines 2-4). Accordingly, claim 19 is rejected.

Regarding claim 21, Figlar teaches the semi-permeable barrier is selected from the group consisting cellulose acetate tow, polypropylene web, polypropylene tow, polyester web (page 2, para. 0020, lines 5-10). Accordingly, claim 21 is rejected.

Regarding claim 22, Figlar teaches a cigarette comprising a tobacco rod and a filter element connected to the tobacco rod, said filter element having an end proximal to the tobacco rod and an end distal from the tobacco rod, wherein said filter element comprises a first longitudinally extending section of filter material positioned at the end of the filter segment distal from the tobacco rod (Figs. 2-4); a second longitudinally extending section of filter material positioned at the end of the filter material distal from the tobacco rod and spaced apart from said first section of filter material, the two sections of filter material defining a compartment therebetween (Fig. 4). Figlar teaches

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an adsorbent material contained within the second section of the compartment (Fig. 4, reference 144; page 2, para. 0021, lines 4-10). Figlar also teaches an ion exchange resin contained within the first region of said compartment (Fig. 4, ref. number 146; page 2, para. 0022, lines 4-8). Accordingly, claim 22 is rejected.

Regarding claims 23-28, 30-32, since Figlar teaches that a variety of filter materials may be used both synthetic acetate fiber and paper fibers, it follows that having ordinary skill in the art would have arrived at the claimed fiber denier/weight, after routine experimentation, in order to provide an optimal filtration efficiency.

Regarding claims 36 and 37, Figlar discloses the adsorbent can be activated carbon. (see para. 0021). Accordingly, claims 36 and 37 are rejected.

3. Claim 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Figlar as applied to claims 16 and 17 above, and further in view of Frund (U.S. Patent No. 3,658,069).

Figlar fails to teach that the activated carbon has an activity of about 60 to about 150 Carbon Tetrachloride Activity. However, Frund teaches the use of an activated carbon that has a carbon tetrachloride activity of at least 95. It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of Figlar with the teachings of Frund to produce a filter capable of filtering toxic agents. Accordingly, claim 18 is rejected.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Figlar, as applied to claim 19 above, and further in view of Wise et al (U.S. Patent No. 3,658,069).

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Figlar fails to teach an adsorbent particle size of the activated carbon. However, Wise shows it is conventional in the art to use an adsorbent that has a particle size of about 8x16 mesh to about 30x70 mesh (column 2, lines 15-19). It would have been obvious to one of ordinary skill in the art at the time of the invention to use an adsorbent, particularly an activated carbon, of a size to effectively filtrate carbon monoxide from tobacco smoke (column 49-52 and column 2, lines 16-17). Accordingly, claim 20 is rejected.

### ***Response to Arguments***

5. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of



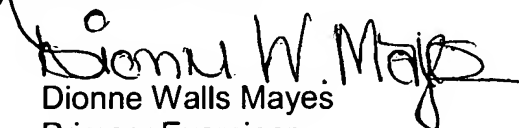
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne Walls Mayes whose telephone number is (571) 272-1195. The examiner can normally be reached on Mon-Fri, 7AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven P. Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Dionne Walls Mayes  
Primary Examiner  
Art Unit 1731

May 23, 2006